Title: CRs (R'99 and Rel-4 Category A) to TS 25.105

Source TSG RAN WG4

Agenda item: 8.4.3

RAN4 Tdoc	Spec	CR	Title	Cat	Phase	Curr Ver	New Ver
R4-010868	25.105	66	BS Performance Requirements (3.84Mcps TDD)	F	Rel99	3.7.0	3.8.0
R4-011056	25.105	67	BS Performance Requirements (3.84Mcps TDD)	Α	Rel-4	4.1.0	4.2.0
R4-010945	25.105	68	Receiver spurious emissions for co-located base stations	F	Rel99	3.7.0	3.8.0
R4-011057	25.105	69	Receiver spurious emissions for co-located base stations	Α	Rel-4	4.1.0	4.2.0
R4-011134	25.105	70	Power and ACLR definition corrections	F	Rel99	3.7.0	3.8.0
R4-011058	25.105	71	Power and ACLR definition corrections.	Α	Rel-4	4.1.0	4.2.0
R4-011163	25.105	72	Clarification in Spectrum emission mask section	F	Rel99	3.7.0	3.8.0
R4-011249	25.105	73	Clarification in Spectrum emission mask section	А	Rel-4	4.1.0	4.2.0
R4-011173	25.105	74	PC dynamic range and minimum TP requirements correction.	F	Rel99	3.7.0	3.8.0
R4-011251	25.105	75	PC dynamic range and minimum TP requirements correction.	Α	Rel-4	4.1.0	4.2.0
R4-011268	25.105	76	Correction of frequency range for receiver spurious emissions	F	Rel99	3.7.0	3.8.0
R4-011270	25.105	77	Correction of frequency range for receiver spurious emissions	A	Rel-4	4.1.0	4.2.0
R4-011290	25.105	78	Definition of "classical Doppler spectrum"	F	Rel99	3.7.0	3.8.0
R4-011294	25.105	79	Definition of "classical Doppler spectrum"	А	Rel-4	4.1.0	4.2.0
R4-010840	25.105	80	BS Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps, Case 1, addition of Figure Note for Table 8.4	F	Rel99	3.7.0	3.8.0

3GPP TSG RAN WG4 Meeting #19 Edinburgh, Great Britain, 3rd - 7th September 2001

							CR-Form-v4
		CHAN	IGE RE	EQUES	ST		
ж	<mark>25.105</mark> (CR <mark>66</mark>	ж	ev _ a	# Current ver	^{sion:} 3.7.0	ж
For <u>HELP</u> on usi	ing this form	, see bottom	of this page	e or look at	t the pop-up tex	t over the # syn	nbols.
Proposed change at	Proposed change affects: # (U)SIM ME/UE X Radio Access Network Core Network						
Title: ೫	BS Perform	ance Require	ements				
Source: ೫	RAN WG4						
Work item code:					Date: ୫	8 9-13 July 200)1
Category: #	F				Release 9	f Rel99	
	Use <u>one</u> of the <i>F</i> (correc <i>A</i> (correc <i>B</i> (additi <i>C</i> (functi <i>D</i> (editor Detailed expla- be found in 30	e following cate ction) sponds to a co on of feature), onal modification inations of the GPP <u>TR 21.900</u>	egories: rrection in al ion of feature n) above categ <u>)</u> .	n earlier rele e) pories can	Use <u>one</u> c 2 ease) R96 R97 R98 R99 REL-4 REL-5	f the following rele (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)	ases:
Reason for change: # To refine the values of performance requirements, the values based on average of simulation results provided by three companies (Panasonic, InterDigital and Siemens) are proposed.						average al and	
Summary of change	e: ೫ <mark>BS Pe</mark> l	rformance Re	equirements	s in Sectior	n 8 are changed	d.	
Consequences if not approved:	策 The va	lues of BS pe	erformance	requireme	ents may not be	reliable.	
Clauses offerted.	Ψ <u>0011</u>	021102	21 0 2 2	1			
Other specs affected:	# 0.2.1.1 # Other Tes 0&N	er core specification specification Specificatic	fications ns	¥			
Other comments:	ж						

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2 Demodulation in static propagation conditions

8.2.1 Demodulation of DCH

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.2.1.1 Minimum requirement

For the parameters specified in Table 8.2 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.3. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		6	4	0	0
$\underline{DPCH_o _ E_c}$	dB	-9	-9.5	0	0
I _{or}					
l _{oc}	dBm/3.84 MHz		-8-	9	
Cell Parameter*			0,	1	
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)
Codes*			C(5,16)	C(9,16)	
DPCH _o Channelization	C(k,Q)	C(i,16) 3≤ i ≤8	C(i,16) 6≤ i ≤9	-	-
Codes*					
Information Data Rate	kbps	12.2	64	144	384
*Note: Refer to TS 2	5.223 for definition	of channelization	codes and cell pa	rameter.	

Table 8.2: Parameters in static propagation conditions

Table 8.3: Performance requirements in AWGN channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER Required E _b /N₀
1	<u>-2.0</u> -1.8	10 ⁻²
2	<u>-0.4</u> -0.35	10 ⁻¹
	<u>-0.1</u> -0.05	10 ⁻²
3	-0.2	10 ⁻¹
	0.1	10 ⁻²
4	<u>-0.8</u> -0.7	10 ⁻¹
	<u>-0.6</u> -0.5	10 ⁻²

8.3 Demodulation of DCH in multipath fading conditions

8.3.1 Multipath fading Case 1

The performance requirement of DCH in multipath fading Case 1 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.1.1 Minimum requirement

For the parameters specified in Table 8.4 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.5. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		6	4	0	0
$DPCH_o _ E_c$	dB	-9	-9.5	0	0
I _{or}					
l _{oc}	dBm/3.84 MHz		-8	39	
Cell Parameter*			0	,1	
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)
Codes*			C(5,16)	C(9,16)	
DPCH _o Channelization	C(k,Q)	C(i,16) 3≤ i ≤8	C(i,16) 6≤ i ≤9	-	-
Codes*					
Information Data Rate	kbps	12.2	64	144	384

	Table 8.4:	Parameters in	n multipath	Case 1	channel
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 Table 8.5: Performance requirements in multipath Case 1 channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<u>6.5</u> 6.7	10 ⁻²
2	<u>5.5</u> 5.3	10 ⁻¹
	<u>9.8</u> 9.7	10 ⁻²
3	5.5	10 ⁻¹
	9.8	10 ⁻²
4	<u>5.1</u> 4.8	10 ⁻¹
	<u>9.5</u> 9.2	10 ⁻²

8.3.2 Multipath fading Case 2

The performance requirement of DCH in multipath fading Case 2 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.2.1 Minimum requirement

For the parameters specified in Table 8.6 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.7. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	
Number of DPCH₀		2	0	0	0	
$DPCH_o _ E_c$	dB	-6	0	0	0	
I _{or}						
l _{oc}	dBm/3.84 MHz		-{	39		
Cell Parameter*		0,1				
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)	
Codes*			C(5,16)	C(9,16)		
DPCH _o Channelization	C(k,Q)	C(i,16) 3≤ i ≤4	-	-	-	
Codes*						
Information Data Rate	kbps	12.2	64	144	384	
*Note: Refer to TS 2	5.223 for definition	of channelization	codes and cell pa	rameter.		

 Table 8.6: Parameters in multipath Case 2 channel

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<u>-0.4</u> 0.2	10 ⁻²
2	<u>0.2</u> 0.1	10 ⁻¹
	2.5	10 ⁻²
3	<u>3.6</u> 3.5	10 ⁻¹
	<u>6.0</u> 5.8	10 ⁻²
4	2.8	10 ⁻¹
	<u>5.2</u> 5.1	10 ⁻²

 Table 8.7: Performance requirements in multipath Case 2 channel.

8.3.3 Multipath fading Case 3

The performance requirement of DCH in multipath fading Case 3 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.3.1 Minimum requirement

For the parameters specified in Table 8.8 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.9. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		2	0	0	0
$DPCH_o _ E_c$	dB	-6	0	0	0
I _{or}					
l _{oc}	dBm/3.84 MHz		-8	39	
Cell Parameter*		0,1			
DPCH Channelization Codes*	C(k,Q)	C(1,8)	C(1,4) C(5,16)	C(1,2) C(9,16)	C(1,2)
DPCH _o Channelization Codes*	C(k,Q)	C(i,16) 3≤ i ≤4	-	-	-
Information Data Rate	Kbps	12.2	64	144	384
*Note: Refer to TS 2	5.223 for definition	of channelization	codes and cell pa	rameter.	

 Table 8.8: Parameters in multipath Case 3 channel

Table 8.9: Performance requirements in multipath Case 3 channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	-0.1	10 ⁻²
2	0.8	10 ⁻¹
	2.7	10 ⁻²
	4.2	10 ⁻³
3	4.5	10 ⁻¹
	<u>6.3</u> 6.4	10 ⁻²
	8.0	10 ⁻³
4	3.6	10 ⁻¹
	<u>5.0</u> 5.1	10 ⁻²
	<u>6.3</u> 6.5	10 ⁻³

3GPP TSG RAN WG4 Meeting #19 Edinburgh, Great Britain, 3rd - 7th September 2001

R4-011056

	CR-F	orm-v4				
	CHANGE REQUEST					
¥	25.105 CR ⁶⁷ # ev - # Current version: 4.1.0 #					
For <u>HELP</u> on u	ising this form, see bottom of this page or look at the pop-up text over the $lpha$ symbol	s.				
Proposed change affects: # (U)SIM ME/UE Radio Access Network X Core Network						
Title: ೫	BS Performance Requirements(3.84Mcps TDD)					
Source: ೫	RAN WG4					
Work item code: ℜ	Date: # 3-7 September 2	001				
Category: ⊮	ARelease: %Rel-4Use one of the following categories:Use one of the following releasesF (correction)2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (addition of feature),R97(Release 1997)C (functional modification of feature)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories canREL-4(Release 4)be found in 3GPP TR 21.900.REL-5(Release 5)	3:				
Reason for change	e: 第 This is Cat.A CR corresponding to R99 CR in R4-01-0868.					
Summary of chang	ge: # BS Performance Requirements for 3.84Mcps TDD in Section 8 are changed.					
Consequences if not approved:	X The values of BS performance requirements may not be reliable.					
Clauses affected:	% 8.2.1.1.1, 8.3.1.1.1, 8.3.2.1.1, 8.3.3.1.1					
Other specs affected:	# Other core specifications # Test specifications 0&M Specifications					
Other comments:	X					

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2 Demodulation in static propagation conditions

8.2.1 Demodulation of DCH

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.2.1.1 Minimum requirement

8.2.1.1.1 3,84 Mcps TDD Option

For the parameters specified in Table 8.2 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.3. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		6	4	0	0
$DPCH_o _E_c$	dB	-9	-9.5	0	0
I _{or}					
l _{oc}	dBm/3.84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)
Codes*			C(5,16)	C(9,16)	
DPCH _o Channelization	C(k,Q)	C(i,16)	C(i,16)	-	-
Codes*		3≤ i ≤8	6≤ i ≤9		
Information Data Rate	kbps	12.2	64	144	384
*Note: Refer to TS 25.22	23 for definition of ch	nannelization cod	les and cell param	eter.	

Table 8.2: Parameters in static propagation conditions

Table 8.3: Performance requirements in AWGN channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER Required E _b /N₀
1	<u>-2.0</u> -1.8	10 ⁻²
2	<u>-0.4</u> -0.35	10 ⁻¹
	<u>-0.1</u> -0.05	10 ⁻²
3	-0.2	10 ⁻¹
	0.1	10 ⁻²
4	<u>-0.8</u> -0.7	10 ⁻¹
	<u>-0.6</u> -0.5	10 ⁻²

8.2.1.1.2 1,28 Mcps TDD Option

For the parameters specified in Table8.2A the BLER should not exceed the piece-wise linear BLER curve specified in Table8.3A. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		4	1	1	0
Spread factor of DPCH₀		8	8	8	-
$\frac{DPCH_o _ E_c}{I_{or}}$	dB	-7	-7	-7	0
l _{oc}	dBm/1.28MHz		-9	91	
Information Data Rate	Kbps	12.2	64	144	384

Table 8.2A: Parameters in static propagation conditions

|--|

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER Required E _b /N₀
1	0.6	10 ⁻²
2	-0.9	10 ⁻¹
	-0.4	10 ⁻²
3	-0.3	10 ⁻¹
	-0.1	10 ⁻²
4	0.5	10 ⁻¹
	0.6	10 ⁻²

8.3 Demodulation of DCH in multipath fading conditions

8.3.1 Multipath fading Case 1

The performance requirement of DCH in multipath fading Case 1 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.1.1 Minimum requirement

8.3.1.1.1 3,84 Mcps TDD Option

For the parameters specified in Table 8.4 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.5. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		6	4	0	0
$DPCH_o _ E_c$	dB	-9	-9.5	0	0
I _{or}					
l _{oc}	dBm/3.84 MHz	m/3.84 MHz -89			
Cell Parameter*		0,1			
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)
Codes*			C(5,16)	C(9,16)	
DPCH _o Channelization	C(k,Q)	C(i,16)	C(i,16)	-	-
Codes*		3≤ i ≤8	6≤ i ≤9		
Information Data Rate	kbps	12.2	64	144	384
*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.					

Table 8 4	Parameters	in	multipath	Case 1	channel
1 4010 0.4.	i arameters		munipain		channer

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<u>6.5</u> 6.7	10 ⁻²
2	<u>5.5</u> 5.3	10 ⁻¹
	<u>9.8</u> 9.7	10 ⁻²
3	5.5	10 ⁻¹
	9.8	10 ⁻²
4	<u>5.1</u> 4.8	10 ⁻¹
	9.5 9.2	10 ⁻²

Table 8.5: Performance requirements in multipath Case 1 channel.

8.3.1.1.2 1,28 Mcps TDD Option

For the parameters specified in Table 8.4A the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.5A .These requirements are applicable for TFCS size 16.

Table 8.4A: Parameters in multipath Case 1 channel

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		4	1	1	0
Spread factor of DPCH₀		8	8	8	-
$\frac{DPCH_o _E_c}{I_{or}}$	DB	-7	-7	-7	0
l _{oc}	dBm/1.28 MHz		-(91	
Information Data Rate	Kbps	12.2	64	144	384

Table 8.5A: Performance requirements in multipath Case 1 channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	10.4	10 ⁻²
2	5.3	10 ⁻¹
	9.4	10 ⁻²
3	5.7	10 ⁻¹
	10.1	10 ⁻²
4	6.0	10 ⁻¹
	10.0	10 ⁻²

8.3.2 Multipath fading Case 2

The performance requirement of DCH in multipath fading Case 2 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.2.1 Minimum requirement

8.3.2.1.1 3,84 Mcps TDD Option

For the parameters specified in Table 8.6 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.7. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		2	0	0	0
$DPCH_o _E_c$	dB	-6	0	0	0
I _{or}					
l _{oc}	dBm/3.84 MHz	-89			
Cell Parameter*		0,1			
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)
Codes*			C(5,16)	C(9,16)	
DPCH _o Channelization	C(k,Q)	C(i,16)	-	-	-
Codes*		3≤ i ≤4			
Information Data Rate	kbps	12.2	64	144	384
*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.					

Table 8.6: Parameters in multipath Case 2 channel

Table 8.7: Performance requirements in multipath Case 2 channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	<u>-0.4</u> -0.2	10 ⁻²
2	<u>0.2</u> 0.1	10 ⁻¹
	2.5	10 ⁻²
3	<u>3.6</u> 3.5	10 ⁻¹
	<u>6.0</u> 5.8	10 ⁻²
4	2.8	10 ⁻¹
	<u>5.2</u> 5.1	10 ⁻²

8.3.2.1.2 1,28 Mcps TDD Option

For the parameters specified in Table 8.6A the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.7A. These requirements are applicable for TFCS size 16.

Table 8.6A: Parameters in multipath Case 2 channel

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		4	1	1	0
Spread factor of DPCH₀		8	8	8	-
$\frac{DPCH_o _E_c}{I_{or}}$	DB	-7	-7	-7	0
l _{oc}	dBm/1.28 MHz		 -{	91	
Information Data Rate	Kbps	12.2	64	144	384

Table 8.7A: Performance requirement	nts in multipath Case 2 channel.
-------------------------------------	----------------------------------

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	6.7	10 ⁻²
2	3.6	10 ⁻¹
	5.9	10 ⁻²
3	4.2	10 ⁻¹
	6.3	10 ⁻²
4	4.6	10 ⁻¹
	6.0	10 ⁻²

8.3.3 Multipath fading Case 3

The performance requirement of DCH in multipath fading Case 3 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.3.1 Minimum requirement

8.3.3.1.1 3,84 Mcps TDD Option

For the parameters specified in Table 8.8 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.9. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		2	0	0	0
$\underline{DPCH_o _E_c}$	dB	-6	0	0	0
I _{or}					
l _{oc}	dBm/3.84 MHz		-8	89	
Cell Parameter*			0),1	
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)
Codes*			C(5,16)	C(9,16)	
DPCH _o Channelization	C(k,Q)	C(i,16)	-	-	-
Codes*		3≤ i ≤4			
Information Data Rate	Kbps	12.2	64	144	384
*Note: Refer to TS 25.22	23 for definition of cl	nannelization coo	les and cell param	neter.	

Table 8.8: Parameters in multipath Case 3 channel

Table 8.9: Performance requirements in multipath Case 3 channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	-0.1	10 ⁻²
2	0.8	10 ⁻¹
	2.7	10 ⁻²
	4.2	10 ⁻³
3	4.5	10 ⁻¹
	<u>6.3</u> 6.4	10 ⁻²
	8.0	10 ⁻³
4	3.6	10 ⁻¹
	<u>5.0</u> 5.1	10 ⁻²
	<u>6.3</u> 6.5	10 ⁻³

8.3.3.1.2 1,28 Mcps TDD Option

For the parameters specified in Table 8.8A the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.9A. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		4	1	1	0
Spread factor of DPCH₀		8	8	8	-
$DPCH_o _ E_c$	DB	-7	-7	-7	0
I _{or}					
l _{oc}	dBm/1.28 MHz		-6	91	
Information Data Rate	Kbps	12.2	64	144	384

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	5.6	10 ⁻²
2	3.2	10 ⁻¹
	4.6	10 ⁻²
	5.9	10 ⁻³
3	3.7	10 ⁻¹
	4.8	10 ⁻²
	5.9	10 ⁻³
4	4.2	10 ⁻¹
	5.1	10 ⁻²
	5.9	10 ⁻³

Table 8.9A: Performance requirements in multipath Case 3 channel.

R4-010945

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST				
¥	25.105 CR 68 * rev	. [#] Current version: 3.7.0		
For <u>HELP</u> on u	sing this form, see bottom of this page or lo	ok at the pop-up text over the X symbols.		
Proposed change	affects: ೫ (U)SIM ME/UE R	adio Access Network X Core Network		
Title: ೫	Receiver spurious emission for co-located	base stations		
Source: #	RAN WG4			
Work item code: भ		<i>Date:</i>		
Category: #	F	Release: ೫ Rel99		
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlied B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories of be found in 3GPP TR 21.900.	Use <u>one</u> of the following releases: 2 (GSM Phase 2) er release) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) can REL-4 (Release 4) REL-5 (Release 5)		
Reason for change	 # In case of separate RX and TX anter have more spurious emission than the stations. 	nna port the receiver is currently allowed to the transmitter in case of co-located base		
Summary of change: # Adding requirements for receiver spurious emission in case of separate RX and TX antenna port. The requirements are in line with the current transmitter requirements for co-located base stations.				
Consequences if not approved:	Reduced performance of the co-local spurious emission.	ted base station caused by receiver		
Clauses affected:	¥ 7.7.1			
Other specs affected:	%Other core specifications%XTest specificationsO&M Specifications	3GPP TS 25.142		
Other comments:	¥			
How to create CRs using this form:				

Comprehensive information and tips about how to create CRs can be found at:

http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://www.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification, which are not relevant to the change request.

7.7 Spurious emissions

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the BS antenna connector. The requirements apply to all BS with separate RX and TX antenna port. The test shall be performed when both TX and RX are on with the TX port terminated.

For all BS with common RX and TX antenna port the transmitter spurious emission as specified in section 6.6.3 is valid.

7.7.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Band	Maximum level	Measurement Bandwidth	Note
9 kHz – 1 GHz	-57 dBm	100 kHz	
1 GHz – 1.9 GHz and 1.98 GHz – 2.01 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
1.9 GHz – 1.98 GHz and 2.01 GHz – 2.025 GHz	-78 dBm	3.84 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
2.025 GHz – 12.75 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.

Table 7.6 : Receiver spurious emission requirements

In addition to the requirements in table 7.6, the co-existence requirements for co-located base stations specified in subclause 6.6.3.2.2, 6.6.3.3.2 and 6.6.3.4.2 may also be applied.

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Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST				
¥	25.105 CR 69 * rev _ * Cu	rrent version: 4.1.0 [%]		
For <u>HELP</u> on us	ng this form, see bottom of this page or look at the po	pp-up text over the X symbols.		
Proposed change at	fects: ೫ (U)SIM ME/UE Radio Acces	s Network X Core Network		
Title: ೫	Receiver spurious emission for co-located base station	ons		
Source: ೫	RAN WG4			
Work item code: 🕷		<i>Date:</i>		
Category: ж	A Re	elease: ೫ Rel-4		
	 Jse <u>one</u> of the following categories: L F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900. 	Jse <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)		
Reason for change:	In case of separate RX and TX antenna port the have more spurious emission than the transmitte stations.	receiver is currently allowed to er in case of co-located base		
Summary of change	Adding requirements for receiver spurious emiss TX antenna port. The requirements are in line w requirements for co-located base stations.	sion in case of separate RX and ith the current transmitter		
Consequences if not approved:	Reduced performance of the co-located base states spurious emission.	ation caused by receiver		
Clauses affected:	# 7.7.1.1			
Other specs affected:	#Other core specifications#XTest specifications3GPP TS 2O&M Specifications3GPP TS 2	25.142		
Other comments:	Ж			

How to create CRs using this form:

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification, which are not relevant to the change request.

7.7 Spurious emissions

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the BS antenna connector. The requirements apply to all BS with separate RX and TX antenna port. The test shall be performed when both TX and RX are on with the TX port terminated.

For all BS with common RX and TX antenna port the transmitter spurious emission as specified in section 6.6.3 is valid.

7.7.1 Minimum Requirement

7.7.1.1 3,84 Mcps TDD Option:

The power of any spurious emission shall not exceed:

Band	Maximum level	Measurement Bandwidth	Note
9 kHz – 1 GHz	-57 dBm	100 kHz	
1 GHz – 1.9 GHz and 1.98 GHz – 2.01 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
1.9 GHz – 1.98 GHz and 2.01 GHz – 2.025 GHz	-78 dBm	3.84 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
2.025 GHz – 12.75 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.

Table 7.6: Receiver spurious emission requirements

In addition to the requirements in table 7.6, the co-existence requirements for co-located base stations specified in subclause 6.6.3.2.2, 6.6.3.3.2 and 6.6.3.4.2 may also be applied.

3GPP TSG RAN WG4 Meeting #19 Edinburgh, Great Britain, 3rd - 7th September 2001

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Source: #	RAN	WG4								
Work item code: भ	B						Date: ೫	3-7/09	/2001	
Category: % F Release: % Rel99 Use one of the following categories: Use one of the following releases: 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can REL-4 (Release 4) be found in 3GPP TR 21.900. REL-5 (Release 5)										
Reason for change	<i>е:</i> Ж	Correc	tions of po	wer relat	ed entitie	es.				
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Consequences if not approved:	ж	Possib	le misunde	erstanding	g of vario	ous powe	er definitions a	nd ACLR	R definit	tion.
Clauses affected:	ж	3.1, 3.3	<mark>3, 6.2, 6.2</mark> .	1, 6.4.3,	6 <mark>.4.3.1, 6</mark>	6 <mark>.4.4, 6.</mark> 5	5 <mark>.1, 6.5.1.1, 6.</mark> 0	6.2.2		
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3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the definitions apply.

Power Setting: The value of the control signal, which determines the desired transmitter, output Power. Typically, the power setting would be altered in response to power control commands

Maximum Power Setting: The highest value of the Power control setting which can be used.

Maximum output Power: This refers to the measure of power when averaged over the transmit timeslot at the maximum power setting.

Peak Power: The instantaneous power of the RF envelope which is not expected to be exceeded for [99.9%] of the time.

Maximum peak power: The peak power observed when operating at a given maximum output power.

Average Power: The average transmitter output power obtained over any specified time interval, including periods with no transmission. *<Editors: This definition would be relevant when considering realistic deployment scenarios where the power control setting may vary.* >

Maximum average power: The average transmitter output power obtained over any specified time interval, including periods with no transmission, when the transmit time slots are at the maximum power setting. *<Editors: The average power at the maximum power setting would also be consistent with defining a long term average power>*

Zero distance: Connected to the antenna connector of the BS using an interconnection of negligible delay

Average Power: The thermal power as measured through a root raised cosine filter with roll-off α =0.22 and a bandwidth equal to the chip rate of the radio access mode. The period of measurement shall be a transmit timeslot excluding the guard period unless otherwise stated.

Maximum Output Power: The maximum Output Power of the base station per carrier measured at the antenna connector (i.e. the actual broadband power as would be measured assuming no measurement error) for a specified reference condition. The period of measurement shall be a transmit timeslot excluding the guard period.

Rated Output Power, PRAT: The Output Power that the manufacturer has declared to be available.

3.2 Symbols

(void)

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BER	Bit Error Rate
BS	Base Station
CW	Continuous wave (unmodulated signal)
DL	Down link (forward link)
DPCH _o	A mechanism used to simulate an individual intracell interferer in the cell with one code and a
	spreading factor of 16
$DPCH_{o} _ E_{c}$	The ratio of the average transmit energy per PN chip for the DPCH _o to the total transmit power
I or	spectral density of all users in the cell in one timeslot as measured at the BS antenna connector

EIRP	Effective Isotropic Radiated Power
FDD	Frequency Division Duplexing
FER	Frame Error Rate
I _{oc}	The power spectral density of a band limited white noise source (simulating interference form
	other cells) as measured at the BS antenna connector.
Î _{or}	The received power spectral density of all users in the cell in one timeslot as measured at the BS
	antenna connector
PPM	Parts Per Million
Pout	Output power.
PRAT	Rated Output power
RSSI	Received Signal Strength Indicator
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UE	User Equipment
UL	Up link (reverse link)
UTRA	UMTS Terrestrial Radio Access

---Next Section----

6.2 Base station output power

Output power, Pout, of the base station is the mean power of one carrier delivered to a load with resistance equal to the nominal load impedance of the transmitter during one slot.

Rated output power, PRAT, of the base station is the mean power level per carrier over an active timeslot that the manufacturer has delared to be available at the antenna connector. The rated output power of the base station are is defined in section 3.1.

6.2.1 Base station maximum output power

Maximum output power, Pmax, of the base station is the mean power level per carrier over an active timeslot measured at the antenna connector for a specified reference condition. The maximum output power of the base station is defined in section 3.1.

6.2.1.1 Minimum Requirement

In normal conditions, the base station maximum output power shall remain within +2 dB and -2 dB of the manufacturer's rated output power.

In extreme conditions, the Base station maximum output power shall remain within +2.5 dB and -2.5 dB of the manufacturer's rated output power.

In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the range of conditions defined as normal.

---Next Section----

6.4.3 Power control dynamic range

The power control dynamic range is the difference between the maximum and the minimum transmit output power <u>of</u> <u>one code channel</u> for a specified reference condition

6.4.3.1 Minimum Requirement

Down link (DL) power control dynamic range shall be greater or equal to 30 dB.

6.4.4 Minimum transmit output power

The minimum controlled output power of the BS is when the power control setting is set to a minimum value. This is when the power control indicates a minimum transmit output power is required.

6.4.4.1 Minimum Requirement

Down link (DL) minimum transmit output power shall be less or equal to is set to: Maximum output power – 30dB

---Next Section---

6.5 Transmit ON/OFF power

6.5.1 Transmit OFF power

<u>Transmit OFF power is defined as the average power measured over one chip when the transmitter is off.</u> The transmit OFF power state is when the BS does not transmit. This parameter is defined as maximum output transmit power within the channel bandwidth when the transmitter is OFF.

6.5.1.1 Minimum Requirement

The requirement of transmit OFF power shall be <u>less better</u> than -79 dBm measured with a filter that has a Root Raised Cosine (RRC) filter response with a roll off α =0.22 and a bandwidth equal to the chip rate.

---Next Section----

6.6.2.2 Adjacent Channel Leakage power Ratio (ACLR)

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the <u>average transmitted</u> power <u>centered on the assigned</u> <u>channel frequency</u> to the <u>average power centered on measured in</u> an adjacent channel <u>frequency</u>. <u>In Bboth cases</u> the transmitted and the adjacent channel power <u>is are</u> measured with through a matched a filter that has a -(Root Raised Cosine (<u>RRC</u>) filter response <u>and with</u> roll-off α =0.22) with a noise power and a bandwidth equal to the chip rate. The requirements shall apply for all configurations of BS (single carrier or multi-carrier), and for all operating modes foreseen by the manufacturer's specification.

---End of changes---

R4-011058

Edinburgh, Great Britain, 3rd - 7th September 2001

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Proposed change affects: # (U)SIM ME/UE Radio Access Network Core Network									
Title: #	Power an	d ACLR definit	ion correction	ons.					
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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3 Definitions, symbols and abbreviations

3.1 Definitions

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Peak Power: The instantaneous power of the RF envelope which is not expected to be exceeded for [99.9%] of the time.

Maximum peak power: The peak power observed when operating at a given maximum output power.

Average Power: The average transmitter output power obtained over any specified time interval, including periods with no transmission. *<Editors: This definition would be relevant when considering realistic deployment scenarios where the power control setting may vary.* >

Maximum average power: The average transmitter output power obtained over any specified time interval, including periods with no transmission, when the transmit time slots are at the maximum power setting. *<Editors: The average power at the maximum power setting would also be consistent with defining a long term average power>*

Zero distance: Connected to the antenna connector of the BS using an interconnection of negligible delay

Average Power: The thermal power as measured through a root raised cosine filter with roll-off α =0.22 and a bandwidth equal to the chip rate of the radio access mode. The period of measurement shall be a transmit timeslot excluding the guard period unless otherwise stated.

Maximum Output Power: The maximum Output Power of the base station per carrier measured at the antenna connector (i.e. the actual broadband power as would be measured assuming no measurement error) for a specified reference condition. The period of measurement shall be a transmit timeslot excluding the guard period.

Rated Output Power, PRAT: The Output Power that the manufacturer has declared to be available.

3.2 Symbols

(void)

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BER	Bit Error Rate
BS	Base Station
CW	Continuous wave (unmodulated signal)
DL	Down link (forward link)
DPCH _o	A mechanism used to simulate an individual intracell interferer in the cell with one code and a
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$DPCH_o _E_c$	The ratio of the average transmit energy per PN chip for the DPCH _o to the total transmit power
Ior	spectral density of all users in the cell in one timeslot as measured at the BS antenna connector

EIRP	Effective Isotropic Radiated Power
FDD	Frequency Division Duplexing
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I _{oc}	The power spectral density of a band limited white noise source (simulating interference form
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Î _{or}	The received power spectral density of all users in the cell in one timeslot as measured at the BS
	antenna connector
PPM	Parts Per Million
Pout	Output power.
PRAT	Rated Output power
RSSI	Received Signal Strength Indicator
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UE	User Equipment
UL	Up link (reverse link)
UTRA	UMTS Terrestrial Radio Access

---Next section ---

6.2 Base station output power

Output power, Pout, of the base station is the mean power of one carrier delivered to a load with resistance equal to the nominal load impedance of the transmitter during one slot.

Rated output power, PRAT, of the base station is the mean power level per carrier over an active timeslot that the manufacturer has delared to be available at the antenna connector. The rated output power of the base station areis defined in section 3.1.

6.2.1 Base station maximum output power

Maximum output power, Pmax, of the base station is the mean power level per carrier over an active timeslot measured at the antenna connector for a specified reference condition. The maximum output power of the base station is defined in section 3.1.

6.2.1.1 Minimum Requirement

In normal conditions, the base station maximum output power shall remain within +2 dB and -2 dB of the manufacturer's rated output power.

In extreme conditions, the Base station maximum output power shall remain within +2.5 dB and -2.5 dB of the manufacturer's rated output power.

In certain regions, the minimum requirement for normal conditions may apply also for some conditions outside the range of conditions defined as normal.

---Next section ---

6.4.3 Power control dynamic range

The power control dynamic range is the difference between the maximum and the minimum transmit output power <u>of</u> <u>one code channel</u> for a specified reference condition

6.4.3.1 Minimum Requirement

Down link (DL) power control dynamic range shall be greater or equal to 30 dB

6.4.4 Minimum transmit output power

The minimum controlled output power of the BS is when the power control setting-is set to a minimum value. This is when the power control indicates a minimum transmit output power is required.

6.4.4.1 Minimum Requirement

Down link (DL) minimum output transmit power shall be less or equal to is set to: Maximum output power - 30dB

---Next section ----

6.5 Transmit ON/OFF power

6.5.1 Transmit OFF power

<u>Transmit OFF power is defined as the average power measured over one chip when the transmitter is off.</u> The transmit OFF power state is when the BS does not transmit. This parameter is defined as maximum output transmit power within the channel bandwidth when the transmitter is OFF.

6.5.1.1 Minimum Requirement

6.5.1.1.1 3,84 Mcps TDD Option

The requirement of transmit OFF power shall be <u>less</u> better than -79 dBm measured with a filter that has a Root Raised Cosine (RRC) filter response with a roll off α =0.22 and a bandwidth equal to the chip rate.

6.5.1.1.2 1,28 Mcps TDD Option

The requirement of transmit OFF power shall be better than -82 dBm measured with a filter that has a Root Raised Cosine (RRC) filter response with a roll off α =0.22 and a bandwidth equal to the chip rate.

---Next section ----

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6.6.2.2 Adjacent Channel Leakage power Ratio (ACLR)

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the <u>average transmitted</u>-power <u>centered on the assigned</u> <u>channel frequency</u> to the <u>average power centered measured in</u> an adjacent channel <u>frequency</u>. In <u>Bboth cases</u> the <u>transmitted and the adjacent channel power isare</u> measured <u>withthrough a matched</u> filter <u>that has a</u> (Root Raised Cosine (<u>RRC</u>) <u>filter response with and</u> roll-off $\underline{\alpha}=0.22$) and a with a noise power bandwidth equal to the chip rate. The requirements shall apply for all configurations of BS (single carrier or multi-carrier), and for all operating modes foreseen by the manufacturer's specification.

The requirement depends on the deployment scenario. Three different deployment scenarios have been defined as given below.

---END----

R4-011163

Edinburgh, Great Britain, 3rd - 7th September 2001

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Category: % F Release: % Rel99 Use one of the following categories: Use one of the following releases: 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can be found in 3GPP <u>TR 21.900</u> . REL-4 (Release 5)					eases:			
Reason for change: # Undefined terms (f_offset and △f) in section 6.6.2.1. Summary of change: # Addition of definition of missing terms. Correction of mask boundary equations.								
Consequences if not approved:	# Misu	Inderstanding	of spectrum	emissior	n mask	requiremer	nts.	
Clauses affected:	₩ <mark>6.6.</mark> 2	2.1						
Other specs affected:	₩ <mark>0</mark> 7 0	ther core spec est specificatio &M Specificati	ifications Ins ons	ж				
Other comments:	ж							

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.6.2 Out of band emission

Out of band emissions are unwanted emissions immediately outside the channel bandwidth resulting from the modulation process and non-linearity in the transmitter but excluding spurious emissions. This out of band emission requirement is specified both in terms of a spectrum emission mask and adjacent channel power ratio for the transmitter.

6.6.2.1 Spectrum emission mask

The mask defined in Table 6.3 to 6.6 below may be mandatory in certain regions. In other regions this mask may not be applied.

For regions where this clause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in tables 6.3 to 6.6 for the appropriate BS maximum output power, in the frequency range from $\Delta f = 2.5$ MHz to $\Delta f_{max} f_{-offset_{max}}$ -from the carrier frequency, where:

- Δf is the separation between the carrier frequency and the nominal -3dB point of the measuring filter closest to the carrier frequency.
- f offset is the separation between the carrier frequency and the center frequency of the measuring filter.

- $f_{offset_{max}}$ is either 12.5 MHz or the offset to the UMTS Tx band edge as defined in section 5.2, whichever is the greater.

- Δf_{max} is equal to f offset_{max} minus half of the bandwidth of the mesurement filter.





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Table 6.3: Spectrum emission mask values, BS maximum output power P \ge 43 dBm

Frequency offset of measurement filter –3dB point, ∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 ≤ ∆f < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 ≤ ∆f < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	- 14 – 15 (f_offset - 2.715)	30 kHz
		dBm	
(see note)	$3.515MHz \leq f_offset < 4.0MHz$	-26 dBm	30 kHz
3.5 ≤ ∆f MHz	$4.0MHz \leq f_offset < f_offset_{max}$	-13 dBm	1 MHz

Table 6.4: Spectrum	emission mask	values, BS maxin	num output power	39 ≤ P < 43 dBm
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Frequency offset of measurement filter –3dB point, ∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 ≤ ∆f < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
$2.7 \le \Delta f < 3.5 \text{ MHz}$	$2.715MHz \le f_offset < 3.515MHz$	-14 - 15 (f_offset - 2.715) dBm	30 kHz
(see note)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 ≤ ∆f < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-13 dBm	1 MHz
7.5 ≤ ∆f MHz	$8.0MHz \le f_offset < f_offset_{max}$	P - 56 dBm	1 MHz

Frequency offset of measurement filter –3dB point,∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
$2.5 \le \Delta f < 2.7 \text{ MHz}$	2.515MHz ≤ f_offset < 2.715MHz	P - 53 dBm	30 kHz
$2.7 \le \Delta f < 3.5 \text{ MHz}$	$2.715MHz \le f_offset < 3.515MHz$	P - 53 - 15 (f_offset - 2.715) dBm	30 kHz
(see note)	$3.515MHz \leq f_offset < 4.0MHz$	P - 65 dBm	30 kHz
3.5 ≤ ∆f < 7.5 MHz	$4.0MHz \leq f_{offset} < 8.0MHz$	P - 52 dBm	1 MHz
$7.5 \le \Delta f MHz$	$8.0MHz \leq f_offset < f_offset_{max}$	P - 56 dBm	1 MHz

Table 6.5: Spectrum emission mask values, BS maximum output power $31 \le P < 39$ dBm

Table 6.6: Spectrum emission mask values, BS maximum output power P < 31 dBm

Frequency offset of measurement filter – 3dB point, ∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
$2.5 \le \Delta f < 2.7 \text{ MHz}$	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 ≤ ∆f < 3.5 MHz	$2.715MHz \le f_offset < 3.515MHz$	-22 - 15 (f_offset - 2.715) dBm	30 kHz
(see note)	$3.515MHz \leq f_offset < 4.0MHz$	-34 dBm	30 kHz
3.5 ≤ ∆f < 7.5 MHz	$4.0MHz \le f_offset < 8.0MHz$	-21 dBm	1 MHz
7.5 ≤ ∆f MHz	8.0MHz \leq f_offset < f_offset _{max}	-25 dBm	1 MHz

NOTE: This frequency range ensures that the range of values of f_offset is continuous.

R4-011249

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST					
ж	25.105 CR 73 [#] ev _ [#] Current version: 4.1.0 [#]				
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.				
Proposed change a	ffects: 第 (U)SIM ME/UE Radio Access Network X Core Network				
Title: ೫	Clarification in Spectrum emission mask section				
Source: ೫	RAN WG4				
Work item code: #	Date: 業 03/09/2001				
Category: ⊮	ARelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D tetailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5				
Reason for change:	$%$ Undefined terms (f_offset and Δ f) in section.				
Summary of change	Addition of definition of missing terms. Correction of mask boundary equations.				
Consequences if not approved:	# Misunderstanding of spectrum emission mask requirements.				
Clauses affected:	% 6.6.2.1.1				
Other specs affected:	% Other core specifications % Test specifications O&M Specifications				

Other comments: % Cat A CR releated to R99 Cat F CR tdoc R4-011163

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.6.2.1 Spectrum emission mask

6.6.2.1.1 3,84 Mcps TDD Option

The mask defined in Table 6.3 to 6.6 below may be mandatory in certain regions. In other regions this mask may not be applied.

For regions where this clause applies, the requirement shall be met by a base station transmitting on a single RF carrier configured in accordance with the manufacturer's specification. Emissions shall not exceed the maximum level specified in tables 6.3 to 6.6 for the appropriate BS maximum output power, in the frequency range from $\Delta f = 2.5$ MHz to $\Delta f_{max} f_{-offset_{max}}$ -from the carrier frequency, where:

- Δf is the separation between the carrier frequency and the nominal -3dB point of the measuring filter closest to the carrier frequency.
- f_offset is the separation between the carrier frequency and the center frequency of the measuring filter.
- f_{max} is either 12.5 MHz or the offset to the UMTS Tx band edge as defined in section 5.2, whichever is the greater.
- <u>- Δf_{max} is equal to f_offset_max</u> minus half of the bandwidth of the mesurement filter.





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Table 6.3: Spectrum emission mask values, BS maximum output power P \ge 43 dBm

Frequency offset of measurement filter – 3dB point, ∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 ≤ ∆f < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 ≤ ∆f < 3.5 MHz	$2.715MHz \le f_offset < 3.515MHz$	- 14 - 15·(f_offset - 2.715)	30 kHz
		UDIII	
(see note)	$3.515MHz \le f_offset < 4.0MHz$	-26 dBm	30 kHz
$3.5 \le \Delta f MHz$	$4.0MHz \le f_offset < f_offset_{max}$	-13 dBm	1 MHz

Table 6.4: Spectrum emission mask values, BS maximum output power $39 \le P < 43$ dBm

Frequency offset of measurement filter – 3dB point, ∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
2.5 ≤ ∆f < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 ≤ ∆f < 3.5 MHz	$2.715MHz \le f_offset < 3.515MHz$	-14 - 15 (f_offset - 2.715) dBm	30 kHz
(see note)	$3.515MHz \leq f_offset < 4.0MHz$	-26 dBm	30 kHz
3.5 ≤ ∆f < 7.5 MHz	$4.0MHz \leq f_offset < 8.0MHz$	-13 dBm	1 MHz
$7.5 \le \Delta f MHz$	8.0MHz \leq f_offset < f_offset _{max}	P - 56 dBm	1 MHz

Frequency offset of measurement filter – 3dB point,∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
$2.5 \le \Delta f < 2.7 \text{ MHz}$	2.515MHz ≤ f_offset < 2.715MHz	P - 53 dBm	30 kHz
$2.7 \le \Delta f < 3.5 \text{ MHz}$	$2.715MHz \le f_offset < 3.515MHz$	P - 53 - 15 (f_offset - 2.715) dBm	30 kHz
(see note)	$3.515MHz \leq f_offset < 4.0MHz$	P - 65 dBm	30 kHz
3.5 ≤ ∆f < 7.5 MHz	$4.0MHz \leq f_{offset} < 8.0MHz$	P - 52 dBm	1 MHz
$7.5 \le \Delta f MHz$	8.0MHz \leq f_offset < f_offset _{max}	P - 56 dBm	1 MHz

Table 6.5: Spectrum emission mask values, BS maximum output power $31 \le P < 39$ dBm

Table 6.6: Spectrum emission mask values, BS maximum output power P < 31 dBm

Frequency offset of measurement filter – 3dB point, ∆f	Frequency offset of measurement filter centre frequency, f_offset	Maximum level	Measurement bandwidth
$2.5 \le \Delta f < 2.7 \text{ MHz}$	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 ≤ ∆f < 3.5 MHz	$2.715MHz \le f_offset < 3.515MHz$	-22 - 15 (f_offset - 2.715) dBm	30 kHz
(see note)	$3.515MHz \leq f_offset < 4.0MHz$	-34 dBm	30 kHz
3.5 ≤ ∆f < 7.5 MHz	$4.0MHz \le f_offset < 8.0MHz$	-21 dBm	1 MHz
7.5 ≤ ∆f MHz	8.0MHz \leq f_offset < f_offset _{max}	-25 dBm	1 MHz

NOTE: This frequency range ensures that the range of values of f_offset is continuous.

R4-011173

Edinburgh, Great Britain, 3rd - 7th September 2001

CHANGE REQUEST					
ж	25.105 CR 74 * ev - * Current version: 3.7.0 *				
For <u>HELP</u> on us	sing this form, see bottom of this page or look at the pop-up text over the X symbols.				
Proposed change a	affects: \$\$ (U)SIM ME/UE Radio Access Network X Core Network				
Title: ೫	PC dynamic range and minimum TP requirements correction.				
Source: ೫	RAN WG4				
Work item code: #	Date: ₩ 3 – 9 – 01				
Category: ೫	FRelease: %Rel99Use one of the following categories: F (correction)Use one of the following releases: 2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (addition of feature), C (functional modification of feature)R97(Release 1997)C (functional modification of feature)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories can be found in 3GPP TR 21.900.REL-5(Release 5)				
Reason for change	: 業 Minimum requirements for PC dynamic range and minimum TP				
Summary of chang	e: # Align requirements with 25.142 and specify desired performance				
Consequences if not approved:	Hara The current requirement is unclear and could become a source of confusion.				
Clauses affected:	₩ 6.4.3.1 and 6.4.4.1				
Other specs affected:	 Conter core specifications Test specifications O&M Specifications 				
Other comments:	¥				

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.4.3 Power control dynamic range

The power control dynamic range is the difference between the maximum and the minimum transmit output power for a specified reference condition

6.4.3.1 Minimum Requirement

Down link (DL) power control dynamic range shall be greater than or equal to------ 30 dB

6.4.4 Minimum transmit power

The minimum controlled output power of the BS is when the power control setting is set to a minimum value. This is when the power control indicates a minimum transmit output power is required.

6.4.4.1 Minimum Requirement

Down link (DL) minimum transmit power shall be lower than or equal is set to: Maximum output power - 30dB

R4-011251

Edinburgh, Great Britain, 3rd - 7th September 2001

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CHANGE REQUEST					
ж	25.105 CR 75 # ev - # Current version: 4.1.0 #				
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the st symbol	s.			
Proposed change a	affects: ೫ (U)SIM ME/UE Radio Access Network X Core Networ	rk			
Title: ¥	PC dynamic range and minimum TP requirements correction.				
Source: ೫	RAN WG4				
Work item code: ೫	Date: 第 4 – 9 – 01				
Category: ⊮	ARelease: %Rel-4Use one of the following categories:Use one of the following releasesF (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99Detailed explanations of the above categories canREL-4be found in 3GPP TR 21.900.REL-5	5:			
Reason for change	e: # Minimum requirements for PC dynamic range and minimum TP				
Summary of chang	e:				
Consequences if not approved:	He current requirement is unclear and could become a source of confusion.				
Clauses affected:	策 6.4.3.1 and 6.4.4.1				
Other specs affected:	# Other core specifications # Test specifications O&M Specifications				
Other comments:	¥				

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.4.3 Power control dynamic range

The power control dynamic range is the difference between the maximum and the minimum transmit output power for a specified reference condition

2

6.4.3.1 Minimum Requirement

Down link (DL) power control dynamic range shall be greater than or equal to -30 dB

6.4.4 Minimum transmit power

The minimum controlled output power of the BS is when the power control setting is set to a minimum value. This is when the power control indicates a minimum transmit output power is required.

6.4.4.1 Minimum Requirement

Down link (DL) minimum transmit power shall be lower than or equal is set to: Maximum output power - 30dB

R4-011268

Edinburgh, Great Britain, 3rd - 7th September 2001

		CR-Form-v4			
CHANGE REQUEST					
ж <mark>т</mark>	<mark>S 25.105</mark> CR 76 [#] ev _ [#] Curre	ent version: 3.7.0 [#]			
For <u>HELP</u> on t	using this form, see bottom of this page or look at the pop-	up text over the # symbols.			
Proposed change	e affects: ೫ (U)SIM ME/UE Radio Access I	Network X Core Network			
Title: भ	Correction of frequency range for receiver spurious emi	issions			
Source: भ	RAN WG4				
Work item code: भ	٤	Date: ₩ 03/09/2001			
Category: ¥	F Release Use one of the following categories: Use F (correction) 2 A (corresponds to a correction in an earlier release) H B (addition of feature), H C (functional modification of feature) H D (editorial modification) H Detailed explanations of the above categories can H be found in 3GPP TR 21.900. H	ase: 第 Rel99 ≥ one of the following releases: 2 (GSM Phase 2) R96 R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)			
Reason for chang	re: 第 The current frequency range for receiver spurious inconsistence with is proposed in ITU-R M.[UNWA	emission requirements is NT-MS].			
Summary of chan	ge: # The starting frequency for receiver spurious emiss from 9kHz to 30MHz as proposed in ITU-R M.[UN	ion requirements is changed WANT-MS].			
Consequences if not approved:	# There will be inconsistency with ITU-R recommended casue further inconsistency with each regulations to recommendation.	dation M.[UNWANT]. It will those follow the			
Clauses affected:	¥ 7.7.1				
Other specs affected:	XOther core specificationsXTest specifications25.142O&M Specifications				

Other comments:

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.7 Spurious emissions

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the BS antenna connector. The requirements apply to all BS with separate RX and TX antenna port. The test shall be performed when both TX and RX are on with the TX port terminated.

For all BS with common RX and TX antenna port the transmitter spurious emission as specified in section 6.6.3 is valid.

7.7.1 Minimum Requirement

The power of any spurious emission shall not exceed:

Band	Maximum level	Measurement Bandwidth	Note
<u>30 MHz</u> 9 kHz – 1 GHz	-57 dBm	100 kHz	
1 GHz – 1.9 GHz and	-47 dBm	1 MHz	With the exception of frequencies between
1.98 GHz – 2.01 GHz			12.5MHz below the first carrier frequency and
			12.5MHz above the last carrier frequency used by
			the BS.
1.9 GHz – 1.98 GHz and 2.01 GHz – 2.025 GHz	-78 dBm	3.84 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
2.025 GHz – 12.75 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.

Table 7.6 : Receiver spurious emission requirements

R4-011270

Edinburgh, Great Britain, 3rd - 7th September 2001

						CR-Form-v4
CHANGE REQUEST						
æ	TS 25	<mark>.105</mark> CR <mark>77</mark>	<mark>У Ж</mark>	ev <mark>_</mark> % C	urrent version:	<mark>4.1.0</mark> [*]
For <u>HELF</u>	on using	this form, see bo	ttom of this page	or look at the p	oop-up text over	the ដ symbols.
Proposed ch	ange affec	: ts:	ME/UE	Radio Acce	ess Network X	Core Network
Title:	ដ <mark>C</mark> o	rrection of freque	ency range for re	ceiver spurious	emissions	
Source:	¥ RA	NWG4				
Work item co	ode: #				Date: 米 03/0	09/2001
Category:	# A Use Deta be for	one of the following F (correction) A (corresponds to B (addition of feat C (functional modified D (editorial modified ailed explanations cound in 3GPP <u>TR 2</u>	g categories: b a correction in an ture), lification of feature, ication) of the above catego (1.900.	<i>earlier release)</i>) pries can	Release: X Rel Use <u>one</u> of the fo 2 (GSM R96 (Rele R97 (Rele R98 (Rele R99 (Rele R99 (Rele REL-4 (Rele REL-5 (Rele	-4 llowing releases: 1 Phase 2) ase 1996) ase 1997) ase 1998) ase 1999) ase 4) ase 5)
Reason for c	hange:	The current fre inconsistence	quency range fo with is proposed	receiver spuric in ITU-R M.[UN	ous emission req WANT-MS].	uirements is
Summary of	change: ೫	The starting fre from 9kHz to 3	equency for recei 0MHz as propos	ver spurious en ed in ITU-R M.[nission requirem UNWANT-MS].	ents is changed
Consequence not approved	esif % l:	There will be in casue further in recommendation	nconsistency with nconsistency with on.	ITU-R recomm each regulation	nendation M.[UN ons those follow t	WANT]. It will the
Clauses affeo	cted: ೫	7.7.1.1				
Other specs affected:	ж	Other core s X Test specific O&M Specif	specifications cations ications	¥ 25.142		
Other comme	ents: ೫	Corresponding	R99 Cat. F CR i	s R4-011268		

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.7 Spurious emissions

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the BS antenna connector. The requirements apply to all BS with separate RX and TX antenna port. The test shall be performed when both TX and RX are on with the TX port terminated.

For all BS with common RX and TX antenna port the transmitter spurious emission as specified in section 6.6.3 is valid.

7.7.1 Minimum Requirement

7.7.1.1 3,84 Mcps TDD Option:

The power of any spurious emission shall not exceed:

|--|

Band	Maximum level	Measurement Bandwidth	Note
<u>30 MHz</u> 9 kHz – 1 GHz	-57 dBm	100 kHz	
1 GHz – 1.9 GHz and 1.98 GHz – 2.01 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
1.9 GHz – 1.98 GHz and 2.01 GHz – 2.025 GHz	-78 dBm	3.84 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.
2.025 GHz – 12.75 GHz	-47 dBm	1 MHz	With the exception of frequencies between 12.5MHz below the first carrier frequency and 12.5MHz above the last carrier frequency used by the BS.

7.7.1.2 1,28 Mcps TDD Option

The power of any spurious emission shall not exceed:

Table 7.6A: Receiver spurious emission requirements

Band	Maximum level	Measurement Bandwidth	Note
9 kHz – 1 GHz	-57 dBm	100 kHz	
1 GHz – 1.9 GHz and 1.98 GHz – 2.01 GHz	-47 dBm	1 MHz	With the exception of frequencies between 4MHz below the first carrier frequency and 4MHz above the last carrier frequency used by the BS.
1.9 GHz – 1.98 GHz and 2.01 GHz – 2.025 GHz	-83 dBm	1.28 MHz	With the exception of frequencies between 4MHz below the first carrier frequency and 4MHz above the last carrier frequency used by the BS.
2.025 GHz – 12.75 GHz	-47 dBm	1 MHz	With the exception of frequencies between 4MHz below the first carrier frequency and 4MHz above the last carrier frequency used by the BS.

R4-011290

Edinburgh, Great Britain, 3rd - 7th September 2001

			CR-Form-v4
	CHAN	IGE REQUEST	
ж	25.105 CR 78	# ev _ # (Current version: 3.7.0 [#]
For <u>HELP</u> on us	ing this form, see bottom	of this page or look at the	pop-up text over the % symbols.
Proposed change a	ffects: ೫ (U)SIM	ME/UE Radio Acc	ess Network X Core Network
Title: អ	Definition of "classical Do	oppler spectrum" in TS 25.	.105
Source: ೫	RAN WG4		
Work item code: ₩			Date: 器 04 September 2001
Category: ⊮	F Use <u>one</u> of the following cate F (correction) A (corresponds to a con B (addition of feature), C (functional modification D (editorial modification Detailed explanations of the be found in 3GPP <u>TR 21.900</u>	egories: rrection in an earlier release) on of feature) n) above categories can l.	Release: 第Rel99Use one of the following releases: 2(GSM Phase 2)R96(Release 1996)R97(Release 1997)R98(Release 1998)R99(Release 1999)REL-4(Release 4)REL-5(Release 5)
Reason for change	・ 業 Clarification of how t	the "classical Doppler spe	ctrum" is defined
Summary of change	e: # A formula of the class as taken by GSM sp	ssical Doppler spectrum w becs	vith Rayleigh fading is introduced,
Consequences if not approved:	Here is not a uniqu	e definition of "classical D	oppler spectrum"
Clauses affected:	<mark>ቼ B.2</mark>		
Other specs affected:	XOther core specificationXTest specificationO&M Specification	ications [#] 25.104 s 25.141, 2 ns	25.142
Other comments:	æ		

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

B.2 Multi-path fading propagation conditions

Table B1 shows propagation conditions that are used for the performance measurements in multi-path fading environment. All taps have classical Doppler spectrum, defined as:

(CLASS)

$$S(f) \propto 1/(1 - (f/f_D)^2)^{0.5}$$

for $f \in -f_d, f_d$.

Table B.1: Propagation Conditions for Multi path Fading Environments

Case 1, speed 3km/h		Case 2, s	peed 3 km/h	Case 3, 120 km/h	
Relative Delay [ns]	Average Power [dB]	Relative Delay Average Power [ns] [dB]		Relative Delay [ns]	Average Power [dB]
0	0	0	0	0	0
976	-10	976	0	260	-3
		12000	0	521	-6
				781	-9

R4-011294

Edinburgh, Great Britain, 3rd - 7th September 2001

	CHANGE	EREQUEST	CR-Form-v4
ж	25.105 CR 79	¥ ev <mark>_</mark> ¥ Curre	nt version: 4.1.0 [#]
For <u>HELP</u> on us	ing this form, see bottom of thi	s page or look at the pop-ι	Ip text over the ₭ symbols.
Proposed change a	ffects: ೫ (U)SIM ME	/UE Radio Access N	etwork X Core Network
Title: ೫	Definition of "classical Dopple	r spectrum" in TS 25.105	
Source: ೫	RAN WG4		
Work item code: ₩		Da	ate: ೫ 04 September 2001
Category: ₩	A Use <u>one</u> of the following categorie: F (correction) A (corresponds to a correction B (addition of feature), C (functional modification of the D (editorial modification) Detailed explanations of the above be found in 3GPP <u>TR 21.900</u> .	Relea s: Use 2 on in an earlier release) R feature) R feature) R e categories can R R	Ise: # Rel-4 one of the following releases: (GSM Phase 2) '96 (Release 1996) '97 (Release 1997) '98 (Release 1998) '99 (Release 1999) 'EL-4 (Release 4) '2EL-5 (Release 5)
Reason for change	: 発 <mark>Clarification of how the "c</mark>	classical Doppler spectrum	" is defined
Summary of chang	e: # A formula of the classical as taken by GSM specs	Doppler spectrum with Ra	ayleigh fading is introduced,
Consequences if not approved:	# There is not a unique def	inition of "classical Dopple	r spectrum"
Clauses affected:	<mark>ቼ B.2</mark>		
Other specs affected:	 X Other core specification X Test specifications O&M Specifications 	ns [#] 25.104 25.141, 25.142	2
Other comments:	ж		

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

B.2 Multi-path fading propagation conditions

B.2.1 3,84 Mcps TDD Option

Table B1 shows propagation conditions that are used for the performance measurements in multi-path fading environment. All taps have classical Doppler spectrum, defined as:

(CLASS) $S(f) \propto 1/(1 - (f/f_D)^2)^{0.5}$ for $f \in -f_d, f_d$.

Case 1, speed 3km/h		Case 2, s	peed 3 km/h	Case 3, 120 km/h	
Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]
0	0	0	0	0	0
976	-10	976	0	260	-3
		12000	0	521	-6
				781	-9

B.2.2 1,28 Mcps TDD Option

TableB2 shows propagation conditions that are used for the performance measurements in multi-path fading environment. All taps have classical Doppler spectrum-, defined as:

TableB2: Propagation Conditions for Multi-Path Fading Environments

Case 1, speed 3km/h		Case 2, sp	eed 3km/h	Case 3, speed 120km/h	
Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]	Relative Delay [ns]	Average Power [dB]
0	0	0	0	0	0
2928	-10	2928	0	781	-3
		12000	0	1563	-6
				2344	-9

R4-010840

Edinburgh, Great Britain, 3rd - 7th September 2001

	CR-Form-v
	CHANGE REQUEST
æ	25.105 CR ⁸⁰ [#] ev _ [#] Current version: 3.7.0 [#]
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop-up text over the $#$ symbols.
Proposed change a	affects: # (U)SIM ME/UE Radio Access Network X Core Network
Title: ೫	BS Performance Requirements for 12.2 kbps, 64 kbps, 144 kbps and 384 kbps, Case 1, addition of Figure Note for Table 8.4
Source: ೫	RAN WG4
Work item code: %	Date: 策 July 9, 2001
Category: ⊮	FRelease: \$Rel99Use one of the following categories:Use one of the following releases:F (correction)2(GSM Phase 2)A (corresponds to a correction in an earlier release)R96(Release 1996)B (addition of feature),R97(Release 1997)C (functional modification of feature)R98(Release 1998)D (editorial modification)R99(Release 1999)Detailed explanations of the above categories canREL-4(Release 4)be found in 3GPP TR 21.900.REL-5(Release 5)
Reason for change	e: ೫ The note was not included in CR R4-010570.
Summary of chang	ye: ដ Add note to Table 8.4
Consequences if not approved:	X The table is incomplete without the note, it is currently called out but not present.
Clauses affected:	<mark>ቼ 8.3.1</mark>
Other specs affected:	% Other core specifications % Test specifications O&M Specifications

How to create CRs using this form:

ж

Other comments:

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3 Demodulation of DCH in multipath fading conditions

8.3.1 Multipath fading Case 1

The performance requirement of DCH in multipath fading Case 1 is determined by the maximum Block Error Rate (BLER) allowed when the receiver input signal is at a specified \hat{I}_{or}/I_{oc} limit. The BLER is calculated for each of the measurement channels supported by the base station.

8.3.1.1 Minimum requirement

For the parameters specified in Table 8.4 the BLER should not exceed the piece-wise linear BLER curve specified in Table 8.5. These requirements are applicable for TFCS size 16.

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of DPCH _o		6	4	0	0
$DPCH_o _ E_c$	dB	-9	-9.5	0	0
I _{or}					
loc	dBm/3.84 MHz		-8	9	
Cell Parameter*			0,	1	
DPCH Channelization	C(k,Q)	C(1,8)	C(1,4)	C(1,2)	C(1,2)
Codes*			C(5,16)	C(9,16)	
DPCH _o Channelization	C(k,Q)	C(i,16) 3≤ i ≤8	C(i,16) 6≤ i ≤9	-	-
Codes*					
Information Data Rate	kbps	12.2	64	144	384
*Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.					

Table 8.4: Parameters in multipath Case 1 channel

Table 8.5: Performance requirements in multipath Case 1 channel.

Test Number	$rac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	6.7	10 ⁻²
2	5.3	10 ⁻¹
	9.7	10 ⁻²
3	5.5	10 ⁻¹
	9.8	10 ⁻²
4	4.8	10 ⁻¹
	9.2	10 ⁻²

2